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Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

May 8, 2014

United States Environmental Protection Agency
EPA Docket Center
Mail Code 2882T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Attention: Docket ID No. EPA-HQ-OAR-2013-0495.

Re: Federal Register/Vol. 79, No. 5/Wednesday, January 8, 2014/ Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units

To Whom It May Concern:

Thank you for the opportunity to provide comments on the notice entitled *Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units* (GHG NSPS proposed rule).[1] The South Carolina Department of Health and Environmental Control (Department/DHEC) is the public health agency for the State of South Carolina, and we are committed to promoting and protecting the health of the public and the environment for the State of South Carolina.

DHEC recognizes the hard work the Environmental Protection Agency (EPA) has performed to date regarding this particular proposed rule. The fact that the EPA received more than 2.5 million comments on the first version of this rule released on April 13, 2012, speaks volumes as to the importance of the issues associated with the country's energy future and reducing carbon pollution. The subsequent changes by EPA resulting in this current proposed rule is very much appreciated by DHEC and suggests the willingness of the EPA to listen and adjust its proposals where appropriate.

The complexity of this rule involve issues regarding the economic costs related to power generation, power grid stability and reliability, and fuel diversity for our nation's security and future. The feasibility of Carbon Capture and Sequestration (CCS) and interstate transportation of captured carbon emissions from plants in South Carolina and their relation to safety, interstate cooperation, and costs (likely passed onto electricity consumers) are also prominent concerns.

DHEC would also like to take this opportunity to remind EPA that the burden of reducing GHG emissions is a global task due to its association with transportation, electricity generation and its

[1] 79 FR 1430 (January 8, 2014).

long term residence in the atmosphere throughout the world. In support of our state's energy diversity and as a commitment to our mission to protect public health and the environment, DHEC offers the following comments on the proposed carbon pollution rules.

Carbon Capture and Sequestration

BEST SYSTEM OF EMISSION REDUCTION

It is concerning that the proposed rule establishes CCS as the "Best System of Emission Reduction" (BSER). The viability of CCS as a safe and cost effective option is still in question. The U.S. Department of Energy (DOE) has questioned whether or not its CCS RD&D program will achieve its vision of "having an advanced CCS technology portfolio ready by 2020 for large-scale CCS demonstration that provides for the safe, cost-effective carbon management that will meet our Nation's goals for reducing [greenhouse gas] emissions."[2] To date, there are no commercial ventures in the United States that capture, transport, and inject large quantities of CO_2 (e.g., 1 million tons per year or more) solely for the purposes of carbon sequestration.[3]

In the GHG NSPS proposed rule preamble, the EPA has noted that there are several plants which take advantage of CCS. These include Southern Company's Kemper County IGCC facility; SaskPower's CCS retrofit project of Unit #3 at Boundary Dam in Saskatchewan, Canada; Summit Power's Texas Clean Energy Project; the Hydrogen Energy California Project; and NRG Energy's W.A. Parish carbon capture project. It should be noted that, as of the date of this letter, none of these projects are actually in operation. It should also be noted that all of the U.S. projects have received some degree for federal assistance in the form of tax credits or hundreds of millions of dollars in DOE grants.[4] It is unlikely that any of these projects would have been able to get off the ground without significant federal funds to do so. Because these projects are still not operational and have not been proven feasible or affordable (the first two factors which must be considered when evaluating BSER, with or without federal assistance), DHEC does not believe that CCS is appropriate as BSER for new coal fired electric utility generating unit (EGU) boilers at this time.

INFRASTRUCTURE

Appropriate storage sites for geological sequestration in South Carolina are still in the research phase so the viability for safe and permanent carbon dioxide storage is unknown. Storage locations outside the state in Alabama and Kentucky have been identified, but these sites have not been verified as permanent safe storage. As such, South Carolina cannot attest to having sites available for carbon sequestration. Until sites are viable, it is not likely any new facility would pursue permits in South Carolina if CCS is required. This puts our state (or any other state lacking CO_2 sequestration sites and transport infrastructure) at a significant economic

[2] U.S. Department of Energy, 2010 *CCS Roadmap*, p. 3.
[3] *Carbon Capture and Sequestration: Research, Development, and Demonstration at the U.S. Department of Energy*, p.22, September 30, 2013.
[4] http://sequestration.mit.edu/tools/projects/kemper.html, http://sequestration.mit.edu/tools/projects/boundary_dam.html, http://sequestration.mit.edu/tools/projects/tcep.html, and http://sequestration.mit.edu/tools/projects/heca.html

disadvantage and jeopardizes the development of a varied energy portfolio. It is not appropriate to require CCS as BSER when the infrastructure to accommodate new units only exists in some areas of the country.

COSTS HAVE NOT BEEN FULLY EVALUATED

Costs associated with the rule will likely be absorbed by the Nation's citizens, including the citizens of South Carolina. South Carolina ranks 40th among the 50 states in median income, ranks 44th in disposable income (or 18% less than the average American); and has, on average, 15% of households falling below the poverty level, with this figure reaching as high as 32% in some counties.[5] The EPA has failed to address the rise in consumer costs for electricity as a result of the CCS requirement. Because of lower income levels in our State, residents would be disproportionately affected by increases in electric rates. Costs associated with CCS could result in an increase in the wholesale price of electricity generated by coal plants by up to 80%.[6]

The EPA Administrator indicated there would be reasonable costs associated with this rule due to the EPA's projections that no new coal-fired EGUs will be built without CCS in the future. However, estimates of costs for carbon transport and sequestration may vary greatly by location.[7] We do not believe the EPA has fully evaluated the costs for carbon transport and sequestration. Estimated long-term cost of pipeline transport and storage of captured CO_2 has been estimated at $15/ton, with costs varying dependent upon source and site characteristics.[8] While pipeline transportation is the most realistic technology available for moving captured carbon, estimates for average pipeline costs were approximately $4 million per mile in 2009.[9] Truck transport cost, a likely mode for South Carolina utilities should it become necessary, may be approximately $6/metric tonne/100 km.[10]

ENERGY RELIABILTY IS CRITICAL

South Carolina is fortunate to have its energy generation for the future trending towards cleaner fuel diversity. By 2022, natural gas is expected to increase from 25.5% (2012) to 31.1%; nuclear generation is predicted to increase to 27.9% (from 18.8% in 2012) and scrubbed coal is expected to be reduced to 27.0% (from 31.0% in 2012).[11] Electric utilities in South Carolina are very close to below the industry standard reserve margin of 12-18%.[12] A utility's reserve margin is used to ensure a reliable power grid and to help account for unexpected events such as a

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[5] State Regulation of Public Utilities Review Committee, *Energy Policy Report*, 2009. pp. 8-9.
[6] United States House of Representatives, Energy & Commerce Committee, February 11, 2014: "Subcommittee Reviews DOE's Clean Coal Programs."
[7] Dooley, J., Dahowski, R., and Davidson, C. 2008. On the Long-Term Average Cost of CO^2 Transport and Storage.
[8] Ibid.
[9] Warner, B., and Shaffer, M. Carbon Capture and Sequestration (CCS): A Pipedream Or A Real Business Opportunity For Gas Pipeline Developers? Pipeline & Gas Journal. May 2009, Vol. 236, No.5.
[10] Herzog, H., and Golomb, D. 2005. Carbon Capture and Storage from Fossil Fuel Use.
[11] South Carolina Office of Regulatory Staff, *Electric Generation Capacity and Regulation in South Carolina* presentation, June 14, 2012.
[12] State Regulation of Public Utilities Review Committee, *Energy Policy Report*, 2009. p. 5.

facility's unscheduled maintenance or a spike in energy demand. By 2023, South Carolina's reserve margin is projected to be approximately 15.9%. As the future economic and energy outlook is not firmly set in stone, the implementation of this proposal ensures no new coal-powered generating units will be built in this state regardless of our energy needs or the associated costs.

PERMITTING IMPLICATIONS

The EPA requested comments on whether or not to codify the GHG rule for the respective sources within existing 40 CFR Part 60 subparts or create a new subpart TTTTT. DHEC supports having this GHG rule as its own separate rule, codified as 40 CFR 60, Subpart TTTT, due to the following reasons:

1. It would be easier to make potential changes to the rule, created by litigation and court decisions, if it is a stand alone rule.
2. Both the existing subpart Da and KKKK address modifications and reconstruction, and this rule does not.
3. Different definitions are used for the different rules. For example the definition of "Stationary combustion turbine" is different for KKKK and TTTT. The monitoring and compliance demonstration requirements are also different. As such, it would be easier to implement the rules separately.

In this proposed rule, modified or reconstructed sources, as defined under part 60, are not being addressed. By not addressing modification and reconstruction, the EPA is creating regulatory uncertainty. We understand these items are to be proposed in June, and EPA should provide a timely, clear path forward as to how they intend to address the issue with regards to modified and reconstructed sources. The Department also recommends that the emission limits for modified and reconstructed EGUs be determined as a separate category from the new source standards in EPA's proposal. Once this new unit rule is final, baseline decisions will have been made that will shape the other rules. These baseline decisions include CCS viability; acceptance of collateral emission increases from CCS parasitic load; the impact on the reliability of the electrical grid; and creating competitive advantages to one state over another.

We need to evaluate all the rules as a comprehensive package to fully understand all the impacts. Without fully examining all the proposals at once, the EPA has put blinders on the stakeholder process. To further clarify, the provision in the rule to apply or not apply to modified/reconstructed sources would be more appropriate if it were in the text of the rule and not just in the preamble. DHEC requests that EPA provide ample opportunity for input into developing a solution for this important issue.

DHEC has concerns as to the implications of this rule setting the best available control technology (BACT) emission limit under the Prevention of Significant Deterioration (PSD) program. Under the CAA and applicable regulations, a PSD permit must contain emissions limitations based on application of BACT for each regulated New Source Review (NSR) pollutant. A determination of BACT for GHGs should be conducted in the same manner as it is done for any other PSD regulated pollutant. Each new source or modified emission unit subject

to PSD is required to undergo a BACT review.[13] This proposed NSPS rule would set the BACT for both new fossil-fuel fired and gas-fired electricity generating units.

The EPA states that this rule does not set a floor for modified or reconstructed units; however, it will not prevent parties from relying on it as a basis for determining BACT in these scenarios as NSPS limits have been relied upon in the past. In other words, a permitting authority or third parties could still argue that the use of partial CCS or Natural Gas Combined Cycle (NGCC) technology – as contemplated by the NSPS – is appropriate as BACT for sources subject to PSD permitting."[14] This proposed change in EPA's position, that NSPS is not the floor of a BACT determination, is a major departure in years of precedent. The EPA must make this new position part of this rule, or do so in a separate rule. DHEC believes that this issue is not being adequately addressed by EPA in the proposed rule, and could result in challenges to issuing GHG PSD permits in the future.

DHEC recently issued a PSD construction permit for new combustion turbines. This construction permit established the proposed NSPS limit as part of BACT for GHGs. When this proposed NSPS becomes final, the GHG emission limit may differ. DHEC seeks guidance on what avenues are available to change the limit in the PSD permit, if needed.

This proposal does not specify what components make up the EGU for a facility. For example, 40 CFR Section 60.40 Da provides clear information related to the applicability of an affected facility under the *Standards of Performance for Electric Utility Steam Generating Units*. DHEC would like to see the EPA provide more specificity in defining the affected facility components under this proposed rule as well.

South Carolina relies on emissions fees to support the costs of our Title V Permitting Program. In recent years we have seen significant reductions in emissions and the associated fees due to closures and fuel switching at coal-fired utility boilers. Title V fees will continue to be impacted as EPA moves forward with regulations for GHG emissions from utility boilers and other rules that result in significant reductions in emissions. EPA should consider the costs to states to implement this rule and other future rules.

COLLATERAL EMISSION INCREASES HAVE NOT BEEN EVALUATED

CCS separation and injection technologies require more fuel use and can result in an approximately 30% parasitic power loss.[15] The increase in emissions from this fuel use (as well as transport emissions) should be quantified and evaluated to determine air quality impacts. Increases in particulate matter, nitrogen oxides and sulfur dioxide due to CCS requirements will impact the permitting process. New sources may have a more difficult time demonstrating

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[13] http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf. p. 17.

[14] United States: Proposed NSPS For GHG Emissions From Power Plants Could Have Wide-Ranging Implications For Other Sectors, Julie R. Domike and Alec C. Zacaroli (Kilpatrick Townsend & Stockton LLP). Last Updated: January 21, 2014.

[15] See: Hearing of the House Subcommittee on Environment and Subcommittee on Energy of the Committee on Science, Space, and Technology- Written Statement of Scott Miller General Manager of City Utilities of Springfield On Behalf of the American Public Power Association March 12, 2014.

compliance with the National Ambient Air Quality Standards (NAAQS); therefore, permits for new sources could not be issued. Reducing one pollutant should not be prioritized over compliance with other pollutant standards. Singling out CO_2 emissions as the target for reduction in this proposal runs counter to the concept of a multi-pollutant approach for improving air quality.[16] Like many other states, South Carolina will have challenges attaining the anticipated lower ozone standard. DHEC strongly believes the current approach of regulating one pollutant at a time is not an efficient way to manage air quality.

IMPLEMENTATION

The EPA has tentatively set June 1, 2015, as the date for the finalization of this rule. The President has requested the implementation of this rule by states to be by June 30, 2016. The administrative procedures DHEC must adhere to for promulgation of rules in South Carolina will render this action improbable to be met by June 30, 2016.

Thank you for your consideration of these comments. DHEC looks forward to working with EPA in the development of this rule. Please contact Robert J. Brown of my staff by telephone at (803) 898-4105 or by email at brownrj@dhec.sc.gov if you have any questions.

Sincerely,

Myra C. Reece, Chief
Bureau of Air Quality

ec: Beverly Banister, U.S. EPA

[16] For a general discussion, see *Moving Towards Multi-Air Pollutant Reduction Strategies in Major U.S. Industry Sectors*. A Report to the U.S. Environmental Protection Agency from the Clean Air Act Advisory Committee (CAAAC), Final Clean Air Act Advisory Committee (CAAAC) Report. November 17, 2011.